



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

P.S. AK

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/581.317	08/08/00	POTAPOV	V 31583-160474

VENABLE  
PO BOX 34385  
WASHINGTON DC 20043-9998

MMC1/0718

EXAMINER

MEDLEY, P

ART UNIT PAPER NUMBER

2834

DATE MAILED: 07/18/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/581,317

Applicant(s)

POTAPOV ET AL.

Examiner

Peter M Medley

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 and 8. 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al in view of Forster.

With respect to claims 1, 10, and 11, the reference discloses an ultrasonic transducer comprising a membrane **7**, holding means, a piezoelectric disc **2**, and a first substance **34**.

The reference does not disclose the what percentage diameter the piezoelectric disc is compared with the membrane or that the first substance is foamed.

The court has stated that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

The Examiner takes Official Notice that the operating characteristics of the transducer are affected by the relationship of the diameters. It would have been obvious to one of ordinary skill in the art to use a diameter of the piezoelectric disc to be between 60% and 85% for the purpose of optimizing the characteristics of the transducer (i.e. changing lobe size and direction). Forster discloses using a polyurethane foam covering for the purpose of improving decay attenuation. It would have been obvious to

Art Unit: 2834

one of ordinary skill in the art to use foam for the purpose of improving decay attenuation.

With respect to claims 2 and 4, the reference discloses in **fig. 6** that holding means is one piece with the membrane **7** and form a pot shaped structure.

With respect to claim 3, the reference discloses the holding means to be a metal, but not Al or an Al alloy.

The court has found that the selection of a known material based on its suitability for its intended use is obvious. *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). The Examiner takes Official Notice that the properties of Al and Al alloys are well known. It would have been obvious to one of ordinary skill in the art to use Al or an Al alloy for the holding means for the purpose of utilizing its well known properties (i.e. thermal, electrical properties, and corrosive resistance).

With respect to claims 5 and 6, the reference does not disclose the same dimensions.

The court has stated that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The Examiner takes Official Notice that the dimension of the transducer affects the output of the transducer. It would have been obvious to one of ordinary skill in the art to use the same dimension for the purpose of getting a certain output.

With respect to claim 7, the reference discloses in lines 28-31 of column 3 that the disc **2** is glued to the membrane **7**.

With respect to claims 8, 9, and 12, the reference does not disclose the specifics of the piezoelectric disc or the foam.

The court has found that the selection of a known material based on its suitability for its intended use is obvious. *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). The Examiner takes Official Notice that the piezoceramic material and foams are well known in the art. It would have been obvious to one of ordinary skill in the art to use a specific piezoceramic material and foam for the purpose of providing specific characteristics for the transducer.

With respect to claim 13, the reference discloses a second substance **5** in **fig. 6**.

With respect to claim 14, the reference discloses in **fig. 6** a first electrode **10** and a thin wire **24** soldered to a second electrode **11**.

With respect to claims 15 and 16, the method claims are necessitated by the product claims.

### **Conclusion**

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter M Medley whose telephone number is 703-305-0494. The examiner can normally be reached on Monday-Friday 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers

Application/Control Number: 09/581,317


Page 5

Art Unit: 2834

for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PM  
July 16, 2001



NESTOR RAMIREZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800